

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number
WO 2004/094435 A3

(51) International Patent Classification⁷: **C07F 7/18**

(21) International Application Number:
PCT/US2004/011607

(22) International Filing Date: 16 April 2004 (16.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/463,191 16 April 2003 (16.04.2003) US

(71) Applicant (for all designated States except US): RENSSELAER POLYTECHNIC INSTITUTE [—US]; 110 8th Street, Troy, NY 12180 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): CRIVELLO, James, V. [US/US]; 756 Carlton Road, Clifton Park, NY 12065 (US).

(74) Agents: GIOENI, Mary, Louise et al.; Heslin Rothenberg Farley & Mesiti P.C., 5 Columbia Circle, Albany, NY 12203 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

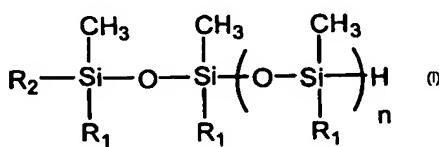
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
21 April 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SILOXANE MONOMERS AND OLIGOMERS



(57) Abstract: A process for preparing α , ω -functional siloxane compounds in a purity of greater than or equal to 90% includes contacting a monohydrosiloxane compound of formula (I) with oxygen in the presence of a platinum group catalyst, without adding water, to form the α , ω -functional siloxane compound in a purity of greater than or equal to 90%; wherein n is 0, 1, or 2; R₁ is fluoroethyl, methyl or phenyl; and R₂ is substituted alkyl, epoxyalkyl, oxetanyloalkyl, substituted oxaalkyl, epoxyoxaalkyl, oxetanyloxaalkyl, alkenyl, alkylalkoxysilyl, substituted alkylaryl, and substituted arylalkyl.

WO 2004/094435 A3

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number
WO 2004/094435 A2

(51) International Patent Classification⁷:

C07F 7/02

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/US2004/011607

(22) International Filing Date: 16 April 2004 (16.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/463,191 16 April 2003 (16.04.2003) US

(71) Applicant (for all designated States except US): RENSSELAER POLYTECHNIC INSTITUTE [—US]; 110 8th Street, Troy, NY 12180 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): CRIVELLO, James, V. [US/US]; 756 Carlton Road, Clifton Park, NY 12065 (US).

(74) Agents: GIOENI, Mary, Louise et al.; Heslin Rothenberg Farley & Mesiti P.C., 5 Columbia Circle, Albany, NY 12203 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

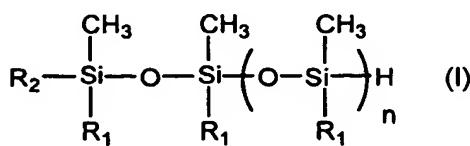
Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/094435 A2

(54) Title: SILOXANE MONOMERS AND OLIGOMERS



oxetanyloxaalkyl, alkenyl, alkylalkoxysilyl, substituted alkylaryl, and substituted arylalkyl.

(57) Abstract: A process for preparing α , ω -functional siloxane compounds in a purity of greater than or equal to 90% includes contacting a monohydrosiloxane compound of formula (I) with oxygen in the presence of a platinum group catalyst, without adding water, to form the α , ω -functional siloxane compound in a purity of greater than or equal to 90%; wherein n is 0, 1, or 2; R_1 is fluoroethyl, methyl or phenyl; and R_2 is substituted alkyl, epoxyalkyl, oxetanyalkyl, substituted oxaalkyl, epoxysiloxane, and substituted arylalkyl.